EXHIBIT B

Attorney Docket No. 52959.54X291
Control No.: 90/014,987 (Re-exam of U.S. Patent No. 9,185,291)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. PATENT NO.:	9,185,291	ART UNIT:	3992
CONTROL NUMBER:	90/014,987	CONF. NO.:	1987
FILING DATE:	March 23, 2022	EXAMINER:	Larose, Colin M.

TITLE: **DUAL APERTURE ZOOM DIGITAL CAMERA**

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ATTN: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE UNDER 37 C.F.R. 1.111 TO A NON-FINAL OFFICE ACTION

This paper is submitted under 37 C.F.R. 1.111 in response to the Office Action mailed on December 22, 2022. Patent Owner authorizes any required fee to be charged to Deposit Account No. 60-3614.

Amendments to the claims begin on page 2.

Remarks begin on page 7.

CLAIMS

1. (Original) A zoom digital camera comprising: a) a Wide imaging section that includes a fixed focal length Wide lens with a Wide field of view (FOV), a Wide sensor and a Wide image signal processor (ISP), the Wide imaging section operative to provide Wide image data of an object or scene; b) a Tele imaging section that includes a fixed focal length Tele lens with a Tele FOV that is narrower than the Wide FOV, a Tele sensor and a Tele ISP, the Tele imaging section operative to provide Tele image data of the object or scene; and c) a camera controller operatively coupled to the Wide and Tele imaging sections, the camera controller configured to combine in still mode at least some of the Wide and Tele image data to provide a fused output image of the object or scene from a particular point of view and to provide without fusion continuous zoom video mode output images of the object or scene, each output image having a respective output resolution; wherein the video output images are provided with a smooth transition when switching between a lower zoom factor (ZF) value and a higher ZF value or vice versa, wherein at the lower ZF value the output resolution is determined by the Wide sensor, and wherein at the higher ZF value the output resolution is determined by the Tele sensor.

2. (Original) The camera of claim 1, wherein the controller includes a user control module for receiving user inputs and a sensor control module for configuring each sensor to acquire the Wide and Tele image data based on the user inputs.

3. (Original) The camera of claim 2, wherein the user inputs include a zoom factor, a camera mode and a region of interest (ROI).

4. (Original) The camera of claim 2, wherein the sensor control module has a setting that depends on the Wide and Tele fields of view and on a sensor oversampling ratio, the setting used in the configuration of each sensor.

5. (Original) The camera of claim 4, wherein the Wide and Tele FOVs and the sensor oversampling ratio satisfy the condition $0.8*PL_{Wide}/PL_{video} < Tan(FOV_{Wide})/Tan(FOV_{Tele}) < 1.2*PL_{Wide}/PL_{video}$, wherein PL_{Wide} is an in-line number of Wide sensor pixels and wherein PL_{video} is an in-line number of output video format pixels.

6. (Original) The camera of claim 1, wherein the Tele lens includes a ratio of total length (TTL)/effective focal length (EFL) smaller than 1.

7. (Original) The camera of claim 6, wherein each lens includes five lens elements.

8. (Original) The camera of claim 7, wherein the five elements have, in order from the object side, positive-negative-negative-positive-negative powers.

9. (Original) The camera of claim 7, wherein the five elements have, in order from the object side, positive-negative-positive-negative and positive or negative powers.

10. (Original) The camera of claim 1, wherein the camera controller configuration to provide video output images with a smooth transition when switching between a lower ZF value and a higher ZF

value or vice versa includes a configuration that uses information either from the Wide sensor or from the Tele sensor.

11. (Original) The camera of claim 1, wherein the camera controller configuration to provide video output images with a smooth transition when switching between a lower ZF value and a higher ZF value or vice versa includes a configuration that uses at high ZF secondary information from the Wide camera and uses at low ZF secondary information from the Tele camera.

12. (Cancelled without prejudice)

13. (Cancelled without prejudice)

14. (Original) The method of claim 13, wherein the Wide and Tele FOVs and the oversampling ratio satisfy the condition $0.8*PL_{WIDE}/PL_{video} < Tan(FOV_{Wide})Tan(FOV_{Tele}) < 1.2*PL_{Wide}/PL_{video}$, wherein PL_{Wide} is an inline number of Wide sensor pixels and PL_{video} is an in-line number of output video format pixels.

15. (Original) The method of claim 12, wherein the step of configuring the camera controller to provide without fusion continuous zoom video mode output images of the object or scene includes performing a registration between the Wide and Tele images to output a transformation coefficient and using the transformation coefficient to set an autofocus position.

16. (Original) The method of claim 12, wherein the smooth transition is obtained when zooming-in by switching between a lower ZF factor and a higher ZF factor at a first ZF value, and is obtained when zooming-out by switching between a higher ZF factor and a lower ZF factor at a second ZF value different from the first ZF value.

17. (Cancelled without prejudice)

18. (Original) The method of claim 12, wherein each lens has a different F number and wherein the step of configuring the camera controller to combine in still mode at least some of the Wide and Tele image data to provide a fused output image includes configuring the camera controller to set an exposure time based on a ratio of the different F numbers.

19. (Original) The method of claim 12, wherein the step of wherein the step of configuring the camera controller to combine in still mode at least some of the Wide and Tele image data to provide a fused output image includes configuring the camera controller to set two images with different intensities to provide a wide dynamic range image.

20. (Original) The method of claim 12, wherein the step of configuring the camera controller to combine in still mode at least some of the Wide and Tele image data to provide a fused output image includes configuring the two sensors to obtain the fused image using a single sensor bandwidth.

21. (Original) The method of claim 12, wherein the step of configuring the camera controller to combine in still mode at least some of the Wide and Tele image data to provide a fused output image includes configuring the camera controller to synchronize the Wide and Tele sensors to force an overlap area in the object image to be exposed at the same time, wherein the synchronizing includes: i) setting a Tele sensor vertical blanking time VB_{Tele} to equal a Wide sensor vertical blanking time VB_{Wide} plus half a Wide sensor rolling shutter time RST_{Wide} , ii) setting respective Tele and Wide sensor exposure times ET_{Tele} and ET_{Wide} to be equal, iii) setting a Tele sensor rolling shutter time RST_{Tele} to be $RST_{Wide}/2$, and iv) setting frame rates of the two sensors to be equal.

22. (Cancelled without prejudice)

REMARKS

This paper is submitted in response to the Office Action mailed on December 22, 2022 regarding U.S. Patent No. 9,185,291 (the "'291 Patent"). The Office Action states that claims 1-7, 10-14, 17, and 22 are presently subject to reexamination. Specifically, claims 1-7, 10-11, and 14 are confirmed as patentable, and claims 12-13, 17, and 22 were rejected.

CLAIM INTERPRETATION

Patent Owner respectfully reserves all rights and objections with respect to the Examiner's claim interpretation under broadest reasonable interpretation. Regarding claim 12, Patent Owner reserves the right to traverse or otherwise disagree with the claim interpretations set forth in the Office Action. For example, Patent Owner reserves the right to contend that the limitation "camera controller" is not subject to 35 U.S.C. 112(f) because at least (1) the term does not receive "means," (2) there is no presumption of treatment under 35 U.S.C. 112(f), (3) the term does not use a generic placeholder in place of "means," (4) the limitation recites sufficient structure to perform the functional language, (5) the alleged placeholder is modified by structural language, and/or (6) the Examiner's proposal reads out relevant structural language. For example, Patent Owner reserves the right to contend that, even if the limitation is interpreted under 35 U.S.C. 112(f), the function should not comprise the wherein clauses and should otherwise be narrowed to a correct function. For example, Patent Owner reserves the right to contend that, even if the limitation is interpreted under 35 U.S.C. 112(f), portions of the identified corresponding structure are irrelevant or otherwise not clearly linked to any proposed recited function and that the algorithm should be clearly linked or associated with the proposed recited function. For example, Patent Owner reserves the right to contend that, even if the limitation is interpreted under 35 U.S.C. 112(f),

portions of the identified corresponding structure are erroneous (such as, *e.g.*, an apparent typographical error identifying autofocusing as incorrect steps 606 and 608, instead of the correct steps 608 and 610). Patent Owner understands that the Examiner has interpreted the claim terms under broadest reasonable interpretation standard and has not evaluated any claim limitations in claims 1-7, 10-14, 17, and 22 under *Phillips*.

CLAIMS 12-13, 17, and 22

Patent Owner respectfully reserves all rights and objections with respect to the Examiner's proposed obviousness grounds relating to claims 12-13, 17, and 22. For the purposes of advancing prosecution, Patent Owner cancels, without prejudice, claims 12-13, 17, and 22. Patent Owner reserves the right to traverse or otherwise disagree with any obviousness grounds set forth by the Examiner in the Office Action. For example, Patent Owner reserves the right to contend that (1) there is no motivation and/or reason to combine the Golan, Paraluski, and Baer references, (2) the Examiner has not set forth a sufficient rationale under *KSR* for combining the Golan, Paraluski, and Baer references to allege obviousness, (3) the proposed combination is based on impermissible hindsight, and (4) the proposed combination has no reasonable expectation of success. For example, Patent Owner reserves the right to contend that certain limitations are not present in the cited portions of the prior art references. Patent Owner does not waive any arguments or objections related to whether any of the references qualify as prior art under the relevant statutes.

Patent Owner has cancelled, without prejudice and without disclaimer, claims 12-13, 17, and 22. Patent Owner has cancelled these claims with the understanding that there is no estoppel as to maintaining and/or pursuing claims directed to the subject matter of the claimed inventions or amendments thereto in parallel or subsequent prosecution and/or proceedings. Patent Owner

reserves the right to pursue claims directed to the subject matter of the claimed inventions or amendments thereto in parallel or subsequent prosecution and/or proceedings.

CONCLUSION

Patent Owner respectfully requests that the Office terminate the instant reexamination and issue a reexamination certificate confirming the validity of claims 1-7, 10-11, and 14 of the '291 Patent.

Dated: April 24, 2023

Respectfully submitted,

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2023-04-24_Patent_Owners_Response_Reexam_90014987.pdf	56918 c9d175191eb9e1f3e796b8c13ce80c2b29859516	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Request for Reconsideration-After Non-Final Rejection	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	9

Warnings:					
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2	Reexam Certificate of Service	52959_54X291_Certificate_of_Service_of_Petition_for_Extension_rehearing.pdf	24099 1cec9645f693ffabcdad473ac492285174b2e725	no	2
Warnings:					
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		Total Files Size (in bytes):	81017		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.